

TABLE OF METRIC (I.S.) CONVERSION FACTORS

NOTE: In the following table, oz for oz (f), g for g (f) = p (or "pund" in German); lb for lb (f) are used indiscriminately, as is common practice. However, in I.S. units the unit of mass is the Kg (kilogram) and the unit of force is the N (Newton). The weight of a body should therefore be expressed in Newtons - however, we may expect that kilograms will be the standard unit of weight, as well as mass, for the foreseeable future. Engineers will know that a Newton (force) is Mass (Kg) ~~is~~ divided by acceleration (gravity), ie.

$$1 \text{ N} = \frac{\text{Kg (f)}}{9.81 \text{ m/s}^2} = \frac{2.205 \text{ lb (f)}}{9.81} \approx 3.6 \text{ oz (f)}$$

	Multiply:	By:	To obtain:		Multiply:	By:	To obtain:
Force	dynes	10^{-5}	Newton (N)	Velocity	miles/hr	0.44704	m/s
	poundals	0.13826	Newton		knots	1.152	mile/hr
	lb (force)	4.4482	Newton		ft/m	5.08×10^{-3}	m/s
	oz (force)	0.2780	Newton				
Mass	gm	10^{-3}	kilogram, (kg)	Inertia	g-cm ²	10^{-7}	kg · m ²
	lb (mass)	.4535	kilogram		g-cm ²	5.468×10^{-3}	oz-in ²
	slug	14.594	kilogram		g-cm ²	7.375×10^{-8}	slug-ft ²
Density	g/cm ³	10^3	kg/m ³		oz-in ²	1.819×10^2	g-cm ²
	lb/ft ³	16.018	kg/m ³		oz-in ²	1.348×10^{-5}	slug-ft ²
Distance	cm	10^{-2}	meter (m)		slug-ft ²	1.357×10^7	g-cm ²
	in	2.5400×10^{-2}	meter		lb-ft-s ²	1	slug-ft ²
	ft	0.30480	meter		slug-ft ²	1.357	kg · m ²
	yd	0.91440	meter		lb-in ²	2.925×10^{-4}	kg · m ²
	km	10^3	meter		oz-in ²	1.829×10^{-5}	kg · m ²
	mile	1609.4	meter		oz-in-s ²	70.6	kg · cm ²
Power	ergs/s	10^{-7}	Watt		lb-ft ²	4.214×10^{-2}	kg · m ²
	metric H.P.	735.5	Watt	Angular velocity	deg/s	1.745×10^{-2}	rad/s
	Btu/hr	0.2930	Watt		deg/s	0.1667	rpm
	Joules/s	1.00	Watt		deg/s	2.778×10^{-3}	rps
	horsepower	746	Watt		rad/s	57.30	deg/s
	ft-lb/s	1.356	Watt		rad/s	9.549	rpm
					rad/s	0.1592	rps
Pressure	dynes/cm ²	10^{-1}	Newton/m ²		rpm	6.0	deg/s
	psi	6.895×10^3	Newton/m ²		rpm	0.1047	rad/s
	cm Hg	1333	Newton/m ²		rpm	1.667×10^{-2}	rps
Torque	lb-ft	1.3558	Newton-m(N.m)		rps	360	deg/s
	lb-ft	192	oz-in		rps	6.283	rad/s
	g-cm	1.389×10^{-2}	oz-in		rev/day	7.27×10^{-5}	rad/sec
	oz-in	5.208×10^{-3}	lb-ft	Power Rate	lb-ft/s ²	1.98×10^{-3}	kW/s ²
	oz-in	72.01	g-cm		lb-ft	20.11	oz-in
	oz-in	7.0612×10^{-3}	N.m	Damping	rad/s		rpm
Energy	oz-in	.70612	N.cm		oz-in	4.974×10^{-2}	lb-ft
	ergs	10^{-7}	joule		rpm		rad/s
	kwhr	3.6×10^6	joule	Volume	oz-in	6.75×10^{-2}	Newton.m/rad/s
	calories	4.182	joule		rpm		
	ft-lb	1.356	joule				
	Btu	1655	joule				